SDIXtreme 3G and 3G+ Product Manual

For all 3G and 3G+ Products

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Extend • Distribute • Innovate

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Subject: SDIXtreme 3G and 3G+
Revision: C, April 2011

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Preface

About this Product Manual

This product manual is divided into three sections: **Hardware, Safety Requirements** and **Product Support**. These are sub-divided to help you easily find the topics and procedures you are looking for. This manual also contains Appendices.

Part 1 – Hardware: This section of the manual contains all the information and instructions on how to assemble your equipment.

Part 2 – Safety Requirements: Thinklogical™ strongly recommends that you read this section of the manual prior to starting the hardware assembly.

Part 3 – Product Support: Thinklogical™ provides the best customer support available. If you have any questions or need to contact us, please refer to this section of the manual.

Conventions Used in this Manual

As you read this manual you will notice certain conventions that bring your attention to important information. These are **Notes** and **Warnings**. Examples are shown below.

Note: Important Notes appear in blue text preceded by a yellow exclamation point symbol, like this.

A note is meant to call the reader's attention to helpful information at a point in the text that is relevant to the subject being discussed.

Warning!   All Warnings appear in red text, followed by blue text, and preceded by a red stop sign, like this.

A warning is meant to call the reader's attention to critical information at a point in the text that is relevant to the subject being discussed.

> **BEFORE STARTING ANY PROCEDURE, IT IS RECOMMENDED THAT YOU READ THE INSTRUCTIONS THOROUGHLY BEFORE PROCEEDING!**

Introduction

The Logical Solution

The SDI Xtreme 3G and 3G+ product series is available with LC-type fiber connectors.

See **Appendix A,** for ordering details on the complete line of the Thinklogical SDI Xtreme 3G and 3G+ products.

Theory of Operation

The SDI Xtreme 3G and 3G+ product series is a compact, broadcast quality SDI over fiber extension system. The system is designed to transmit up to two SD/HD signals or one 3G SDI signal with or without embedded audio and data, and is SMPTE 424M, 292M, 259M, 372M and 425 level A and B compliant. In addition, this fiber based transport system gives users the assurance that each signal is immune to video pathological signals over the entire length of the fiber interconnect, while supporting all pathological patterns at all rates. The system also supports either single or multimode fiber and is fully compatible with Thinklogical's VX and HDX Router line of products.

The SDI Xtreme 3G+ product line has an RS-422 port for device control. These are available in single or dual chassis models. The dual chassis model houses two separate SDI Xtreme 3G+ units, providing multiple combinations of transmitter and receiver possibilities. There are also options for loop out and multiplexed signals.

The SDI Xtreme 3G+ Rack Mount (RM) may be used as a transmitter, a receiver, or the slots may be mixed for flexible configurations (as a transceiver). All SDI interface modules are hot-swappable and each has its own RS-422 port. The front panel user interface provides all the essential features such as status monitoring and link activity for mission critical environments. System architecture provides hot-swappable, current sharing power supply modules, a critical component in high up-time environments which typically are supported by more than one power grid as a failover option. In the unlikely event that a power module fails, there is no interruption to the component because they are both working all the time. In addition, a dry contact annunciator provides an alarm warning in the event of a power failure or a unit overheating and a replacement may be installed with minimal downtime.
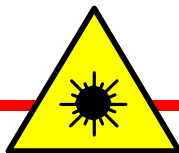
CLASS 1 LASERS do not require any special precautions under conditions of normal use.

Warning! In order to avoid possible exposure to laser energy, it is good practice to attach the fiber optic cables prior to applying power to the unit. If the fiber optic cable should become disconnected, DO NOT attempt to look into the cable or the panel mounted connector.

Technical Specifications

Indicators:	(3) Power, Data Rate SD, HD, 3G – Lock Detect - Active
Dimensions:	**3G** = 4.96 x 2.25 x 1.03 (in) – 125.98 x 57.12 x 26.14 (mm)
	3G+ = Height: 1.68" (4.3cm) Depth: 3.427" (8.7cm) Width: 5.609" (14.25 cm)
	3G+ RM = Rack Size: EIA 19" Height: 1U-1.72" (4.40 cm) Depth: 18.02" (45.8 cm) Width: 17.49" (44.5 cm)
	(Tolerance: ± .039"; .100cm)
Weight:	**3G** = ~ 1 lb. (~0.45 kg.)
	3G+ = <1lb (0.45kg) each Shipping Weight: 4lb (1.81kg) pair
	3G+ RM = 15 lbs (4.99 kg) per unit Shipping Weight: 30 lbs (12.25 kg) pair
Supply Voltage	**3G and 3G+=** 5-14 VDC
	3G+ RM =90-264 VAC, 47-63 Hz, Universal AC Power Supplies
Power Consumption:	**3G and 3G+** = 6 Watts per unit
	3G+ RM = 30 Watts fully loaded per unit
Operating Temperature:	0º C to +50º C; (32°-122°F)

TRANSMITTER Specifications:

Number of SDI Inputs	1 - 2
Data Rate Range	270Mbps to 2.97 Gbps
Supported Standards	SMPTE 424M, 292M, 259M, 372M and 425 level A and B compliant
Re-clocked Data Rates	270 Mbps (SMPTE 259M), 1.485 Gbps (SMPTE 292), 2.97 Gbps (SMPTE 424M)
Equalization	Automatic up to 140m of Belden 1694A at 3.0 Gbps, 230m at 1.485 Gbps and 350m at 270 Mbps
Return Loss	>10dB up to 2.97 Gbps
Number of Loop Outs	1
Number of Optical Outputs	2
DC Signal Level	800mV ± 10%
DC Offset	0V ± 0.5V
Overshoot	< 10% of amplitude
Timing Jitter	< 0.2 UI at 270 Mbps; < 1.0 UI at 1.485 Gbps; < 2 UI at 2.97 Gbps with color bar signal
Alignment Jitter	< 0.2 UI at 270 Mbps 1.485 Gbps; < 0.3 UI at 2.97 Gbps with color bar signal
Rise/Fall Time	0.4 ns to 1.5 ns at 270 Mbps per SMPTE 259M < 270 ps at 1.485 Gbps per SMPTE 292; < 135 ps at 2.97 Gbps per SMPTE 424M;
Re-clocking	At 270 Mbps, 1.485 Gbps, and 2.97 Gbps

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OPTICAL Output:

Connector	LC receptacle	
Fiber Type	**Multi-mode**	**Single Mode**
Wavelength (nominal)	850nm	1310nm
Emitter Type	VCSEL	DFB Laser
Output Power (nominal)	-4dBm	-1.5dBm
Re-clocking	At 270 Mbps, 1.485 Gbps & 2.97 Gbps	

RECEIVER Specifications:

Fiber Input

Connector	LC receptacle	
Fiber Type	**Multi-mode**	**Single Mode**
Wavelength	770 – 860nm	1260 - 1360nm
Minimum Input Sensitivity	-12dBm	-15dBm
Maximum Input Power	0 dBm	0.5dBm

Number of SDI Outputs	1 - 2
Signal Level	800mV ± 10%
DC Offset	0V ± 0.5V
Overshoot	< 10% of amplitude
Timing Jitter	< 0.2 UI at 270 Mbps; < 1.0 UI at 1.485 Gbps; < 2 UI at 2.97 Gbps with color bar signal
Alignment Jitter	< 0.2 UI at 270 Mbps; < 1.0 UI at 1.485 Gbps; < 0.3 UI at 2.97 Gbps with color bar signal
Rise/Fall Time	0.4 ns to 1.5 ns at 270 Mbps per SMPTE 259M < 270 ps at 1.485 Gbps per SMPTE 292; < 135 ps at 2.97 Gbps per SMPTE 424M;
Re-clocking	At 270 Mbps, 1.485 Gbps, and 2.97 Gbps

Part 1: Hardware

Contents

When you receive your Thinklogical™ SDI Xtreme 3G, you should receive the following items:

- SDI Xtreme 3G Hardware
- 5VDC Power Cords – PWR-000022-R (**3G**, **3G+**)
- AC power cord, PWR-000006-R (International connections may differ) – Qty 2 (**3G+ Rack-mount Only**)
- Product Manual CD
- Product Quick-Start Guide

All physical connections to the product use industry-standard connectors.

SFP+ Modules

Small **F**orm-factor **P**luggable modules are short-wavelength transceivers designed for use in bi-directional fiber-optic channel links. Each SFP module is hot-pluggable and operates on 3.3VDC.

Each Tx and Rx contains SFP+ modules that serve as the fiber-optic couplers for the fiber cables to and from the Thinklogical™ Tx and Rx units.

Always use dust caps to protect against damage when a fiber optic connector is not attached to its coupling device (fiber optic equipment, bulkheads, etc.)

Figure 1: SFP+ Module
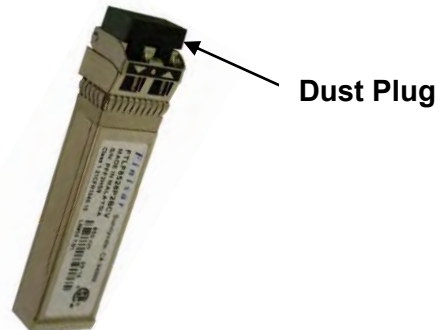
Dust Plug

Figure 2: It is good practice to install dust plugs in unused SFP+s.

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Dry Contact Alarm (3G+ RM Only)

There are dry contact alarms located on each module in the 3G+ Rack Mount units. When there is an alarm condition, such as an over temperature condition or an issue with a power supply or fan, the relay is energized.
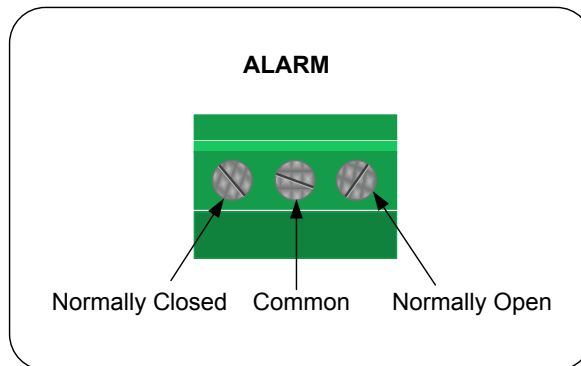

Figure 3: Dry Contact Alarm

The dry contact alarm is a Form C contact with the following ratings:
- Nominal switching capacity- 1A, 30VDC, 0.3A 125VAX (resistive load)
- Max. switching power- 30W (DC), 37.5VA (AC) (resistive load)

If there are no current alarm conditions the front panel should read as below with "0" indicating that there are no failures:
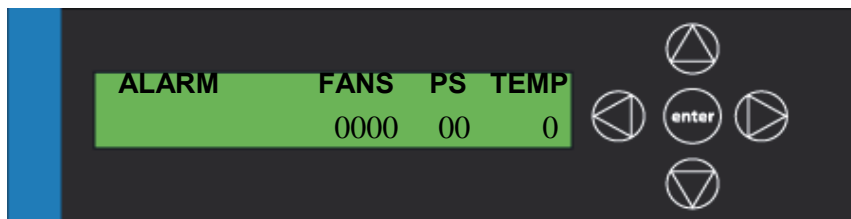
Figure 4: No Alarm Conditions Present

If an alarm condition is identified, a "1" will indicate a failure as described below:
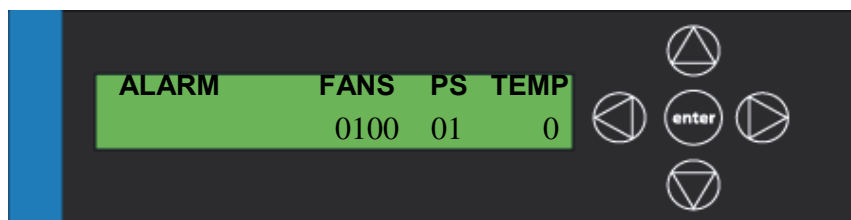
Figure 5: Alarm Conditions Present

This example indicates that Fan #2 and Power Supply #1 have each encountered a failure.

Hot Swappable Power Supplies (3G+ Rack-Mount Only)

The 3G+ Rack Mount units are equipped with dual hot-swappable, current sharing power supply modules. Each module has an ON/OFF rocker-type power switch. When the power supply is ON the LED on the front of the power supply will be lit.

⚠️ **Note: If no modules are plugged in but both power supplies are powered "On" the front LED status may flash or malfunction, giving you an inconclusive reading of power supply status for the unit. An uninstalled power module will not report an alarm.**

In the unlikely event that a power module fails, the replacement can be swapped with no interruption in unit functionality. To hot swap a power supply, simply unscrew the failed module and replace it with a new power supply module (part number VTM-000001, which can be ordered from Thinklogical™).
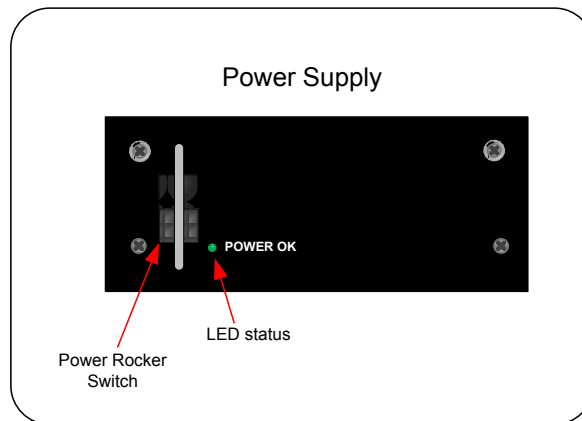
Figure 6: Power Supply Status and Rocker Switch Location

Fiber Optic Cable

Fiber optic cable must run between the Transmitter unit and the Receiver unit. The multi-mode fiber optic cable must be 50 microns, terminated with a LC-type fiber optic connector and no longer than 3280 running feet (1000 meters). Single-mode fiber can extend to distances beyond 1000m.

Unlike copper cabling, fiber optic cable requires special handling. A small speck of dust or a scratch to the ferrule tip can attenuate the optical signal, making the fiber cable unusable.

🛑 **Warning! The ends of the connectors (the ferrule) should never come in contact with any foreign object, including fingertips.**

🛑 **Warning!   Minimum bend radius must be 3". Be careful not to pinch the fiber when using ties.**

Connecting to the Thinklogical™ SDI Xtreme 3G

Installation

All physical connections to the product use industry-standard connectors. Non-supplied cables that may be needed are commercially available. All connections are found on the rear of the unit.

Set-Up

⚠️ **Note: To avoid inadvertent exposure to the lasers, the fiber optic cables should be attached to the SDI Xtreme 3G prior to powering up the units.**

Order of Installation Events

Refer to the Quick Start Guides in **Appendix B** on page 23.

RS-422 (3G+ Products Only)

The RS-422 connector on 3G+ models is wired to emulate an **SMPTE 207M Machine Control Pin-out**.

- In Rack Mount products **jumper J5** may be used to flip the transmit and receive polarities on both TX and RX boards.

- In Stand Alone products **jumper J8** may be used to flip the transmit and receive polarities on both TX and RX boards.

⚠️ **Note: The jumpers must be in the same position on both the TX and RX to function correctly.**

The RS-422 pin-out is:

Tx without Jumper *or* Rx with Jumper	Tx with Jumper *or* Rx without Jumper
1. Frame Ground	1. Frame Ground
2. Receive B	2. Transmit A
3. Transmit A	3. Receive B
4. Receive Common	4. Receive Common
5. Spare	5. Spare
6. Transmit Common	6. Transmit Common
7. Receive A	7. Transmit B
8. Transmit B	8. Receive A
9. Frame Ground	9. Frame Ground

Part 2: Safety Requirements

Symbols found on the product

Markings and labels on the product follow industry-standard conventions. Regulatory markings found on the products comply with requirements.

Regulatory Compliance

Thinklogical™ products are designed and made in the U.S.A. Products have been tested by a nationally recognized testing laboratory and found to be compliant with the following standards (both domestic USA and many international locations).

North America

These products comply with the following standards:

Safety

ANSI/UL60950-1: 1st Edition (2003)

CAN/CSA C22.2 No. 60950-1-03

LASER Safety

CDRH 21CFR 1040.10

Class 1 LASER Product

Electromagnetic Interference

FCC CFR47, Part 15, Class A

Industry Canada ICES-003 Issue 2, Revision 1

Australia & New Zealand

This is a Class A product. In a domestic environment this product may cause radio interference, in which case the user may be required to take adequate measures.

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European Union

Declaration of Conformity

Manufacturer's Name & Address: **Thinklogical™**
100 Washington Street
Milford, Connecticut 06460 USA
Telephone (203) 647-8700

Product Name

Model: SDI Xtreme 3G

These products comply with the requirements of the Low Voltage Directive 72/23/EEC and the EMC Directive 89/336/EEC.

Standards with Which Our Products Comply

Safety
CENELEC EN 60950-1, (2006)

LASER Safety
IEC60825:2001 Parts 1 and 2
Class 1 LASER Product

Electromagnetic Emissions
EN55022: 1994 (IEC/CSPIR22: 1993)
EN61000-3-2/A14: 2000
EN61000-3-3: 1994

Electromagnetic Immunity
EN55024: 1998 Information Technology Equipment-Immunity Characteristics
EN61000-4-2: 1995 Electro-Static Discharge Test
EN61000-4-3: 1996 Radiated Immunity Field Test
EN61000-4-4: 1995 Electrical Fast Transient Test
EN61000-4-5: 1995 Power Supply Surge Test
EN61000-4-6: 1996 Conducted Immunity Test
EN61000-4-8: 1993 Magnetic Field Test
EN61000-4-11: 1994 Voltage Dips & Interrupts Test

Supplementary Information

The following statements may be appropriate for certain geographical regions and might not apply to your location.

This Class A digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.

Cet appareil numérique de la classe A respecte toutes les exigencies du Règlement sur le mat érial brouilleur du Canada.

Warning! This is a Class A product. In a domestic environment, this product may cause radio interference, in which case the user may be required to take adequate measures.

Note: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications in which case the user may be required to take adequate corrective measures at their own expense.

Note: This Class A digital apparatus complies with Canadian ICES-003 and has been verified as being compliant within the Class A limits of the FCC Radio Frequency Device Rules (FCC Title 47, Part 15, Subpart B CLASS A), measured to CISPR 22: 1993 limits and methods of measurement of Radio Disturbance Characteristics of Information Technology Equipment.

Note: The user may notice degraded audio performance in the presence of electromagnetic fields.

Note: If using a keyboard that is noise susceptible, a ferrite ring on the keyboard cable may be needed to comply with Immunity Requirements

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Product Serial Number

Thinklogical™ products have a unique serial number, imprinted on an adhesive label that is fixed to the bottom of the chassis. The serial number includes a date-code. The format for the date-code is 2 digits for the month, 2 digits for the day and 2 digits for the year, plus two or three digits for a unique unit number. This serial number is also found on the original shipping carton.

Connection to the Product

Connections and installation hardware for our products use industry-standard devices and methods. All wiring connections to the customer equipment are designed to minimize proprietary or customized connectors and cabling. Power connections are made with regionally appropriate power cords and approved methods.

Part 3: Thinklogical™ Support

Customer Support

Thinklogical™ is an engineering company and you will receive the information you require directly from our most knowledgeable engineers. We believe that the first line of support is the design engineer that developed the product. Therefore, your questions will be handled promptly by our in-house engineers who are most familiar with your products.

> **Thank you for choosing Thinklogical™ products for your application.**
> *We appreciate your business and are dedicated to helping you successfully use our products.*
> ***thinklogical*** *is always here to help you.*
> **To contact us, please use the following telephone numbers and internet-based methods:**

Website

Check out our website for current product offerings, support information and general information about all of the products we offer.

Our internet website offers product information on all current systems, including technical specification sheets and installation guides (for viewing online or for download), product diagrams showing physical connections and other information you might need.

Internet: **www.thinklogical.com**

⚠ **Note: Most online documents are stored as Adobe Acrobat "PDF" files. If you do not have the Adobe Acrobat reader needed to view PDF files, visit www.adobe.com for a download.**

Email

Thinklogical™ is staffed Monday through Friday from 8:30am to 5:00pm, Eastern Time Zone. We will try to respond to your email inquiries promptly, use the following email addresses for your different needs:

info@thinklogical.com – Information on Thinklogical™ and our products.

sales@thinklogical.com – Sales Department - orders, questions or issues.

support@thinklogical.com – Product support, technical issues or questions, product repairs and request for Return Authorization.

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Telephone

Telephone Sales: Contact our expert, technically oriented sales staff via telephone in Milford, CT at **(203) 647-8700** or if in the continental US, you may use our **toll-free number (800) 291-3211**. We are here Monday through Friday from 8:30am to 5:00pm, Eastern Time Zone. Ask for their direct dial phone number when you call.

Telephone Product Support: Contact Product Support via telephone in Milford, CT at **(203) 647-8700**. The support lines are manned Monday through Friday, 8:30am to 5:00pm, Eastern Time Zone.

International Sales: Please contact our US sales staff in Milford, CT at **(203) 647-8700**. We are here Monday through Friday, 8:30am to 5:00pm, Eastern Time Zone (same as New York City). If leaving a voice message, please let us know the best time to call back so we may reach you at your convenience.

Our switchboard attendant will direct your call during regular business hours. We have an automated attendant answering our main telephone switchboard after regular business hours and holidays. You can leave a voice message for an individual at any time. Our sales representatives have direct numbers for your convenience.

Fax

Our company facsimile number is **(203) 783-9949**. Please indicate the nature of the fax on your cover sheet and provide return contact information.

Product Support

Thinklogical's™ support personnel are available Monday through Friday from 8:30am to 5:00pm, Eastern Time Zone. If your application requires assistance at some time outside of our normal business hours, please contact us beforehand and we will do our best to make arrangements to help you with your Thinklogical™ products.

Warranty

Thinklogical, LLC ("Thinklogical") warrants this product against defects in materials and workmanship for a period of one (1) year from the date of delivery (ordinary wear and tear excluded). This limited warranty does not cover defects resulting from (i) use of the product other than as described in the applicable documentation for the product; (ii) modifications to or repairs of the product that are made by any party other than Thinklogical or a party acting on Thinklogical's behalf, or (iii) combination of the product with third party products that is not consented to by Thinklogical. Occurrences of events described in (i) – (iii) shall void the foregoing warranty. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

Except for the express warranty set forth above, to the fullest extent permitted under applicable law, Thinklogical, LLC and its suppliers disclaim any and all other warranties, express and implied, including without limitation the implied warranties of merchantability, fitness for a particular purpose, title and non-infringement.

If the defective product is returned to the authorized dealer within one (1) year of the delivery date, repair or replacement of the product will be made. Repairs may be made with refurbished parts. If repair or replacement is not possible, Thinklogical may keep the defective product and refund the amount that you paid for the defective product. These are Thinklogical's sole obligations, and your exclusive remedies, for a breach of the limited warranty set forth above.

To return a defective product, contact the Thinklogical authorized dealer from whom you purchased the product. Do not return a product directly to Thinklogical without prior authorization from your dealer.

If you have received prior authorization from your dealer and are returning a product directly to Thinklogical:

1. Contact a sales representative or Customer Support at 800-291-3211 or 203-647-8700.
2. Describe the product defect and Customer Support will issue a Return Merchandise Authorization Number (RMA#).
3. Pack the product in its original packing, if possible, and write the RMA number on the box.
4. Return the product to:
   Thinklogical, LLC
   Attn: RMA# [Insert the RMA# issued to you by Thinklogical™ here.]
   100 Washington Street
   Milford, CT 06460 USA

Our Address

If you have any issue with the product, have product questions or need technical assistance with your Thinklogical™ system, please call us at **800-291-3211 (USA only)** or **203-647-8700** and let us help. If you'd like to write us, our mailing address is:

<div align="center">

Thinklogical™ Inc.
100 Washington Street
Milford, CT 06460 USA

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Appendix A: Ordering Information

Thinklogical's SDI Xtreme Optics for 3G, 3G+, 3G+ Rack-mount	
Part Number	**Description**
SDI FIBER OPTIC EXTENDER OPTICS OPTIONS for SINGLE MODE	
VOP-S19	SDI Xtreme 3G Optics Option, Single Mode 4km, 1 SFP Dual Fiber, LC
VOP-S20	SDI Xtreme 3G Optics Option, Single Mode 10km, 1 SFP Dual Fiber, LC
VOP-S21	SDI Xtreme 3G Optics Option, Single Mode 30km, 1 SFP Dual Fiber, LC
VOP-S29	SDI Xtreme 3G Optics Option, Single Mode 4km, 2 SFP Four Fibers, LC
VOP-S30	SDI Xtreme 3G Optics Option, Single Mode 10km, 2 SFP Four Fibers, LC
VOP-S58	SDI Xtreme 3G Optics Option, Single Mode 30km, 2 SFP Four Fibers, LC
SDI FIBER OPTIC EXTENDER OPTICS OPTIONS for MULTI-MODE	
VOP-M18	SDI Xtreme 3G Optics Option, Multi-Mode, 1 SFP Dual Fiber, LC
VOP-M21	SDI Xtreme 3G Optics Option, Multi-Mode, 2 SFP Four Fibers, LC

Thinklogical's SDI Xtreme 3G	
Part Number	**Description**
SDI-L10001-LCTX	SDI Xtreme 3G Transmitter, One Input with Loop Out, LC
SDI-C10001-LCRX	SDI Xtreme 3G Receiver, One SFP, 2 Outputs, LC

SDIXtreme 3G+ Single *Part Numbers and Descriptions*

Transmitters — Receivers

Fiber Optic Cables

SDI-L100X1-LCTX
SDIXtreme 3G+ Transmitter with
One Input with Loop Out, One SFP

SDI-C100X1-LCRX
SDIXtreme 3G+ Receiver with
One SFP, Two SDI Outputs

SDI-M100X1-LCTX
SDIXtreme 3G+ Transmitter with
Two Input Multiplexer, One SFP

SDI-M100X1-LCRX
SDIXtreme 3G+ Receiver with
One SFP, Two Individual De-Multiplexed SDI Outputs

SDI-0200X1-LCTX
SDIXtreme 3G+ Transmitter with
Two Inputs, Two SFPs

SDI-0200X1-LCRX
SDIXtreme 3G+ Receiver with
Two SFPs, Two Individual SDI Outputs

SDI-L200X1-LCTX
SDIXtreme 3G+ Transmitter with
One Input with Loop Out, Two SFPs

SDI-C100X1-LCRX
SDIXtreme 3G+ Receiver with
One SFP, Two SDI Outputs

SDI-C100X1-LCRX
SDIXtreme 3G+ Receiver with
One SFP, Two SDI Outputs

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SDIXtreme 3G+ Dual Transmitters *Part Numbers and Descriptions*
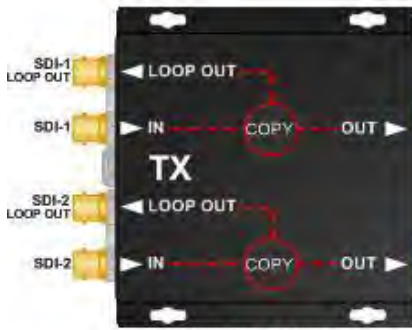
SDI-L1L1X2-LCTX
SDIXtreme 3G+ Transmitter with
Two Inputs with Loop Outs, Two SFPs
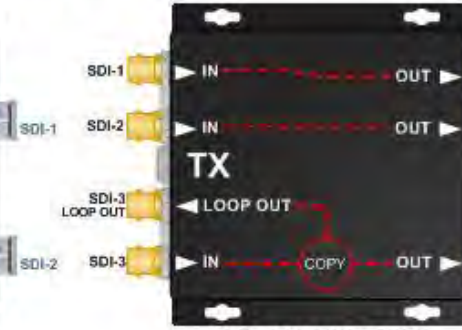
SDI-02L1X2-LCTX
SDIXtreme 3G+ Transmitter with
Two Inputs plus One Input with Loop Out,
Three SFPs
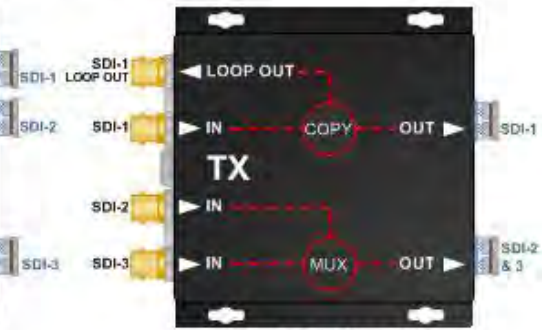
SDI-L1M1X2-LCTX
SDIXtreme 3G+ Transmitter with
One Input with Loop Out and Two Input
Multiplexer, Two SFPs

SDI-L2L2X2-LCTX
SDIXtreme 3G+ Transmitter with
Two Inputs with Loop Outs, Four SFPs
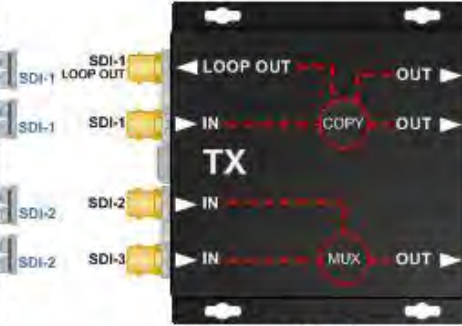
SDI-L2M1X2-LCTX
SDIXtreme 3G+ Transmitter with
One Input with Loop Out and Two Input Multiplexer,
Three SFPs
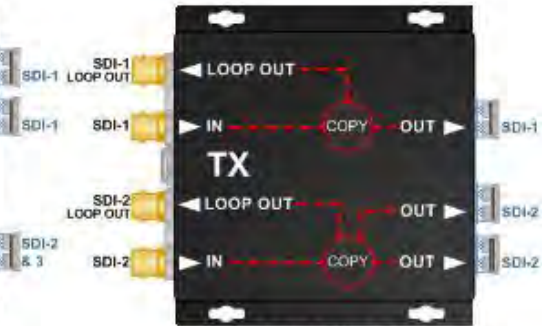
SDI-L1L2X2-LCTX
SDIXtreme 3G+ Transmitter with
Two Inputs with Loop Outs, Three SFPs
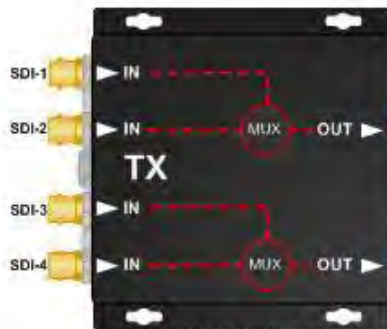
SDI-M1M1X2-LCTX
SDIXtreme 3G+ Transmitter with
Pair of Two Input Multiplexers, Two SFPs
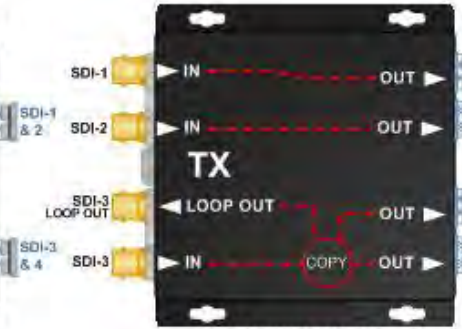
SDI-02L2X2-LCTX
SDIXtreme 3G+ Transmitter with
Two Inputs plus One Input with Loop Out,
Four SFPs
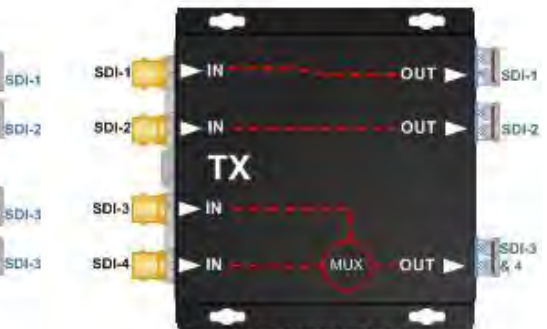
SDI-02M1X2-LCTX
SDIXtreme 3G+ Transmitter with
Two Inputs plus Two Input Multiplexer,
Three SFPs
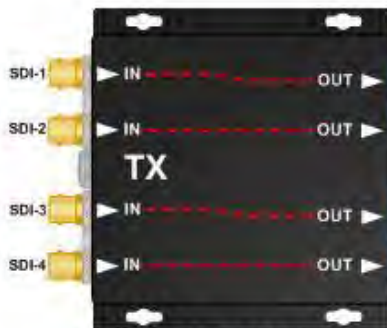
SDI-0202X2-LCTX
SDIXtreme 3G+ Transmitter with
Four Inputs, Four SFPs

SDIXtreme 3G+ Dual Receivers *Part Numbers and Descriptions*
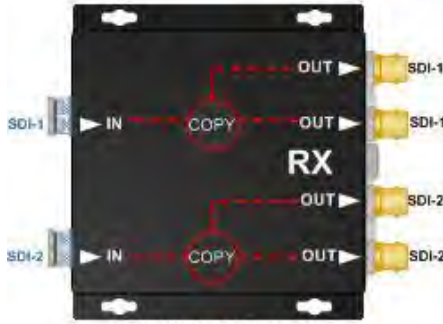
SDI-C1C1X2-LCRX
SDIXtreme 3G+ Receiver with
Two SFPs, Two pairs of SDI Outputs
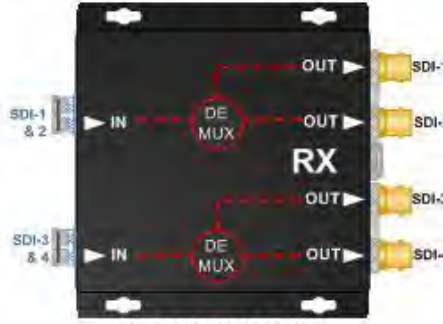
SDI-M1M1X2-LCRX
SDIXtreme 3G+ Receiver with
Two SFPs, Two Pairs of Individual De-
Multiplexed SDI Outputs
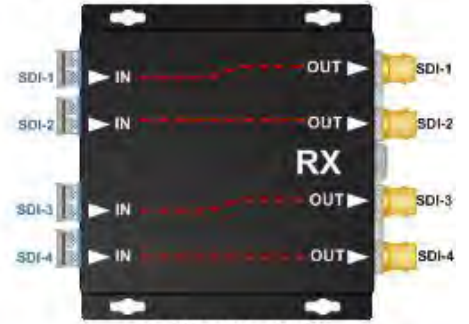
SDI-0202X2-LCRX
SDIXtreme 3G+ Receiver with
Four SFPs, Four Individual SDI Outputs
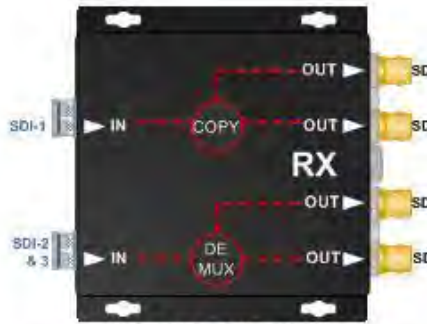
SDI-C1M1X2-LCRX
SDIXtreme 3G+ Receiver with
Two SFPs, Two SDI Outputs plus Two
Individual De-Multiplexed SDI Outputs
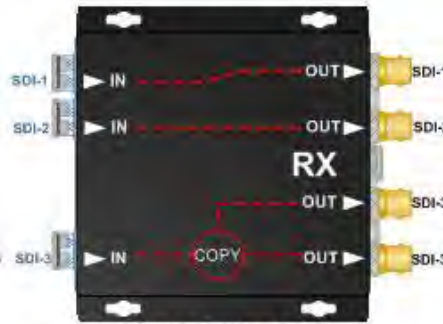
SDI-02C1X2-LCRX
SDIXtreme 3G+ Receiver with
Three SFPs, Two Individual SDI Outputs
plus Two SDI Outputs
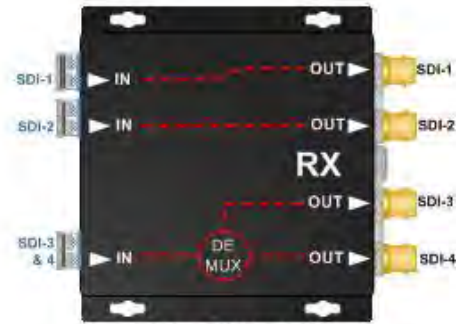
SDI-02M1X2-LCRX
SDIXtreme 3G+ Receiver with
Three SFPs, Two Individual SDI Outputs
plus Two Individual De-Multiplexed SDI
Outputs

SDIXtreme 3G+ Transceivers *Part Numbers and Descriptions*
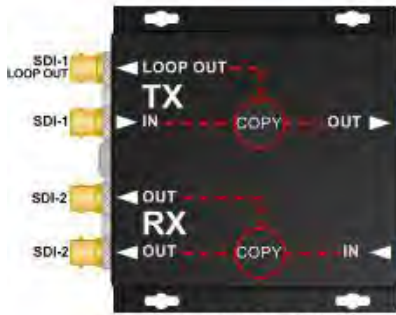
SDI-L1C1X2-LCTR
SDIXtreme 3G+ Transceiver with
TX: One Input with Loop Out, One SFP
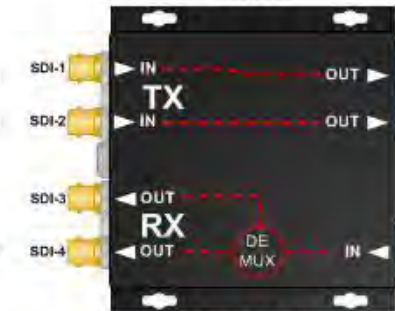RX: One SFP, Two SDI Outputs
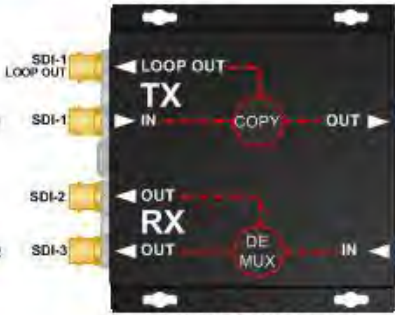
SDI-L1M1X2-LCTR
SDIXtreme 3G+ Transceiver with
TX: One Input with Loop Out, One SFP
RX: One SFP, Two Individual De-Multiplexed SDI Outputs
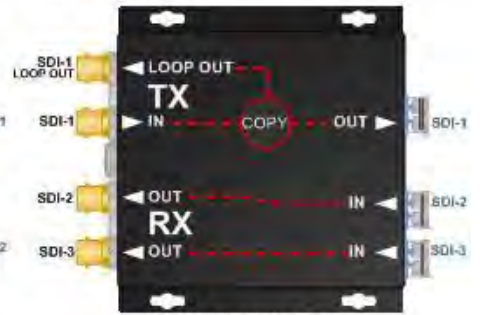
SDI-L102X2-LCTR
SDIXtreme 3G+ Transceiver with
TX: One Input with Loop Out, One SFP
RX: Two SFPs, Two Individual SDI Outputs
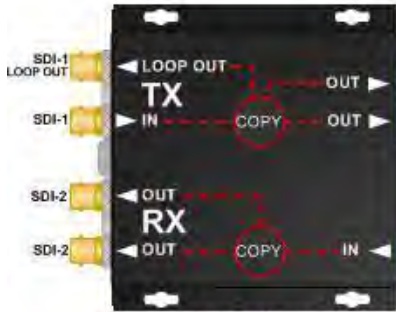
SDI-L2C1X2-LCTR
SDIXtreme 3G+ Transceiver with
TX: One Input with Loop Out, Two SFPs
RX: One SFP, Two SDI Outputs
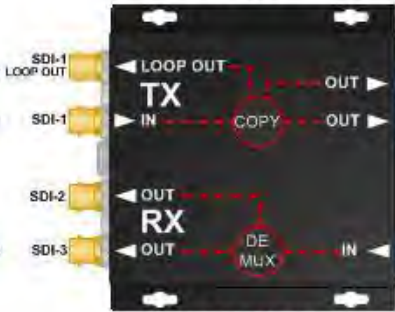
SDI-L2M1X2-LCTR
SDIXtreme 3G+ Transceiver with
TX: One Input with Loop Out, Two SFPs
RX: One SFP, Two Individual De-Multiplexed SDI Outputs
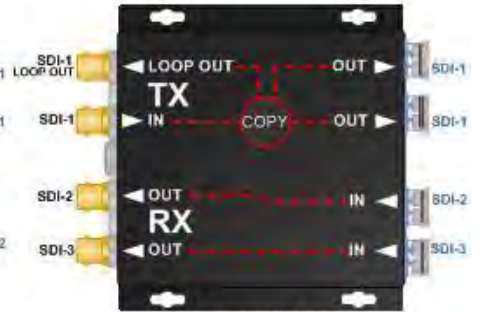
SDI-L202X2-LCTR
SDIXtreme 3G+ Transceiver with
TX: One Input with Loop Out, Two SFPs
RX: Two SFPs, Two Individual SDI Outputs
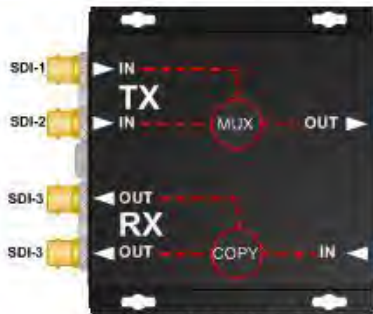
SDI-M1C1X2-LCTR
SDIXtreme 3G+ Transceiver with
TX: Two Input Multiplexer, One SFP
RX: One SFP, Two SDI Outputs
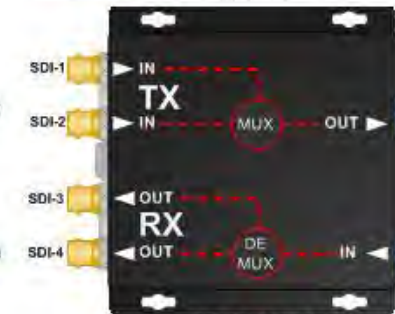
SDI-M1M1X2-LCTR
SDIXtreme 3G+ Transceiver with
TX: Two Input Multiplexer, One SFP
RX: One SFP, Two Individual De-Multiplexed SDI Outputs
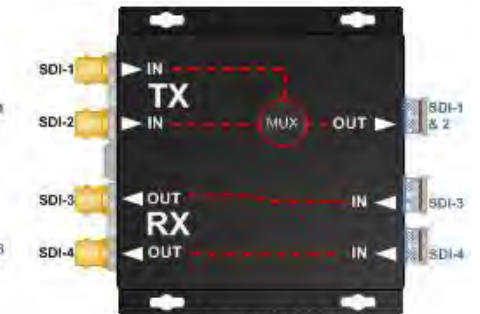
SDI-M102X2-LCTR
SDIXtreme 3G+ Transceiver with
TX: Two Input Multiplexer, One SFP
RX: Two SFPs, Two Individual SDI Outputs
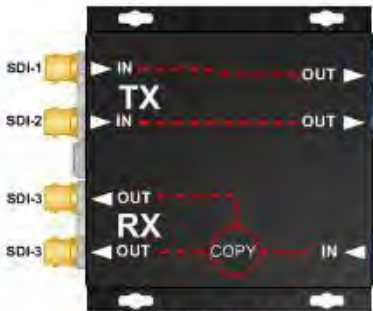
SDI-02C1X2-LCTR
SDIXtreme 3G+ Transceiver with
TX: Two Inputs, Two SFPs
RX: One SFP, Two SDI Outputs

SDI-02M1X2-LCTR
SDIXtreme 3G+ Transceiver with
TX: Two Inputs, Two SFPs
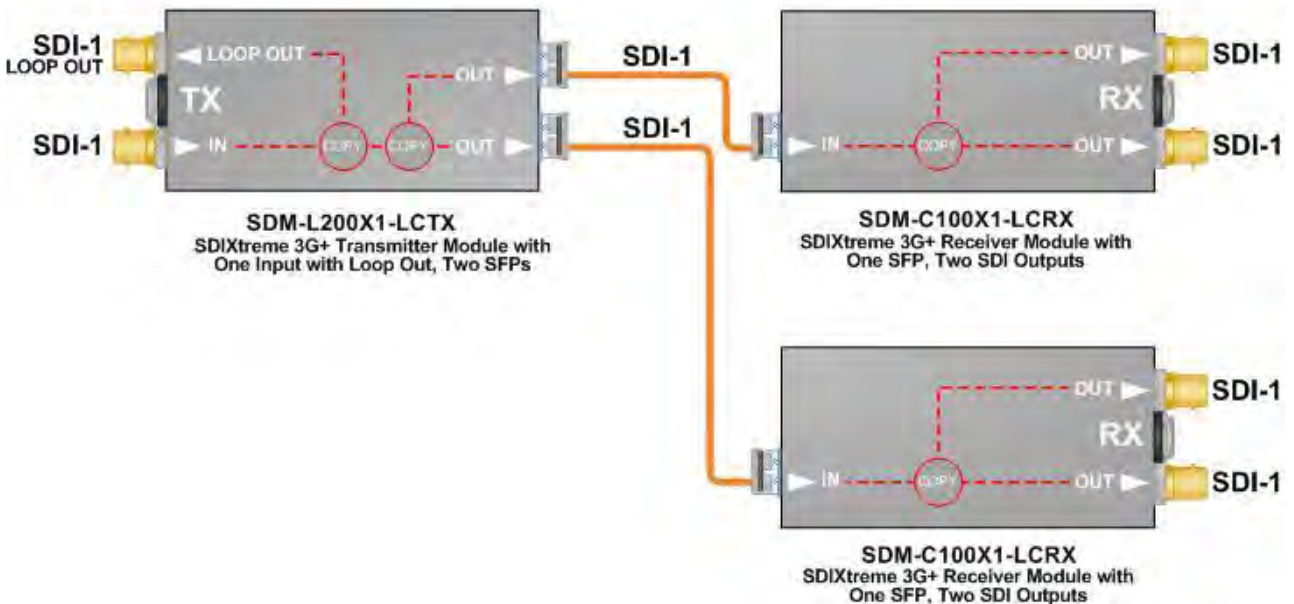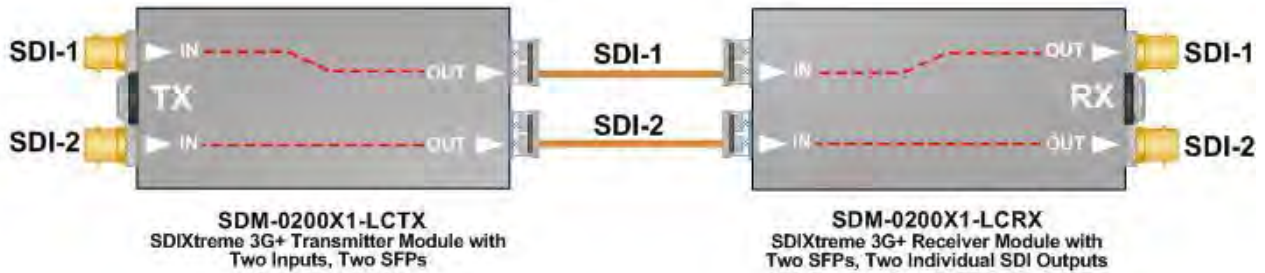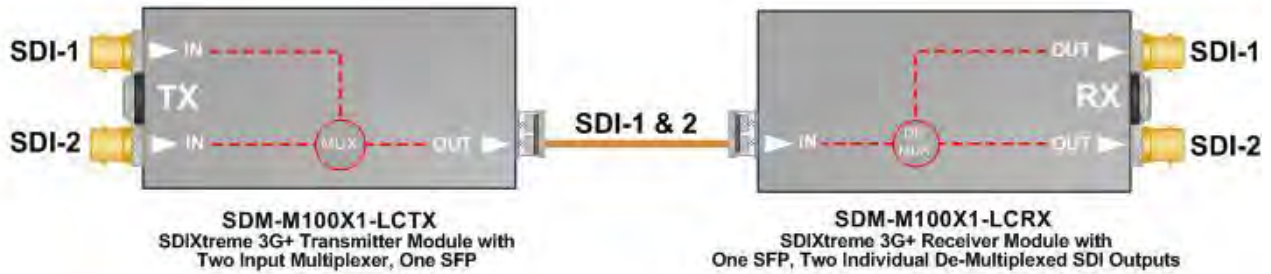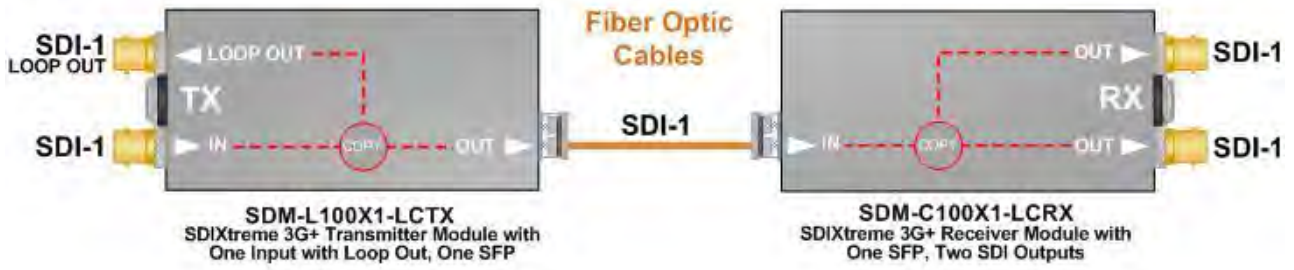RX: One SFP, Two Individual De-Multiplexed SDI Outputs
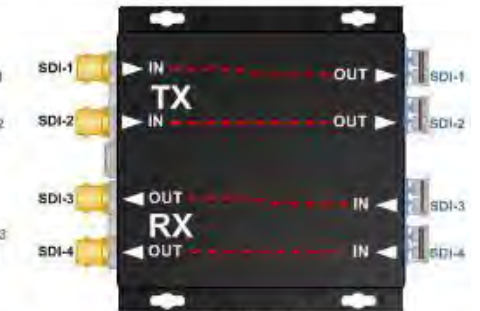
SDI-0202X2-LCTR
SDIXtreme 3G+ Transceiver with
TX: Two Inputs, Two SFPs
RX: Two SFPs, Two Individual SDI Outputs

SDIXtreme 3G+ Rack Mount Modular *Part Numbers and Descriptions*

Transmitters   Receivers

Fiber Optic Cables

SDM-L100X1-LCTX
SDIXtreme 3G+ Transmitter Module with
One Input with Loop Out, One SFP

SDM-C100X1-LCRX
SDIXtreme 3G+ Receiver Module with
One SFP, Two SDI Outputs

SDM-M100X1-LCTX
SDIXtreme 3G+ Transmitter Module with
Two Input Multiplexer, One SFP

SDM-M100X1-LCRX
SDIXtreme 3G+ Receiver Module with
One SFP, Two Individual De-Multiplexed SDI Outputs

SDM-0200X1-LCTX
SDIXtreme 3G+ Transmitter Module with
Two Inputs, Two SFPs

SDM-0200X1-LCRX
SDIXtreme 3G+ Receiver Module with
Two SFPs, Two Individual SDI Outputs

SDM-L200X1-LCTX
SDIXtreme 3G+ Transmitter Module with
One Input with Loop Out, Two SFPs

SDM-C100X1-LCRX
SDIXtreme 3G+ Receiver Module with
One SFP, Two SDI Outputs

SDM-C100X1-LCRX
SDIXtreme 3G+ Receiver Module with
One SFP, Two SDI Outputs

Appendix B: Quick Start Guides
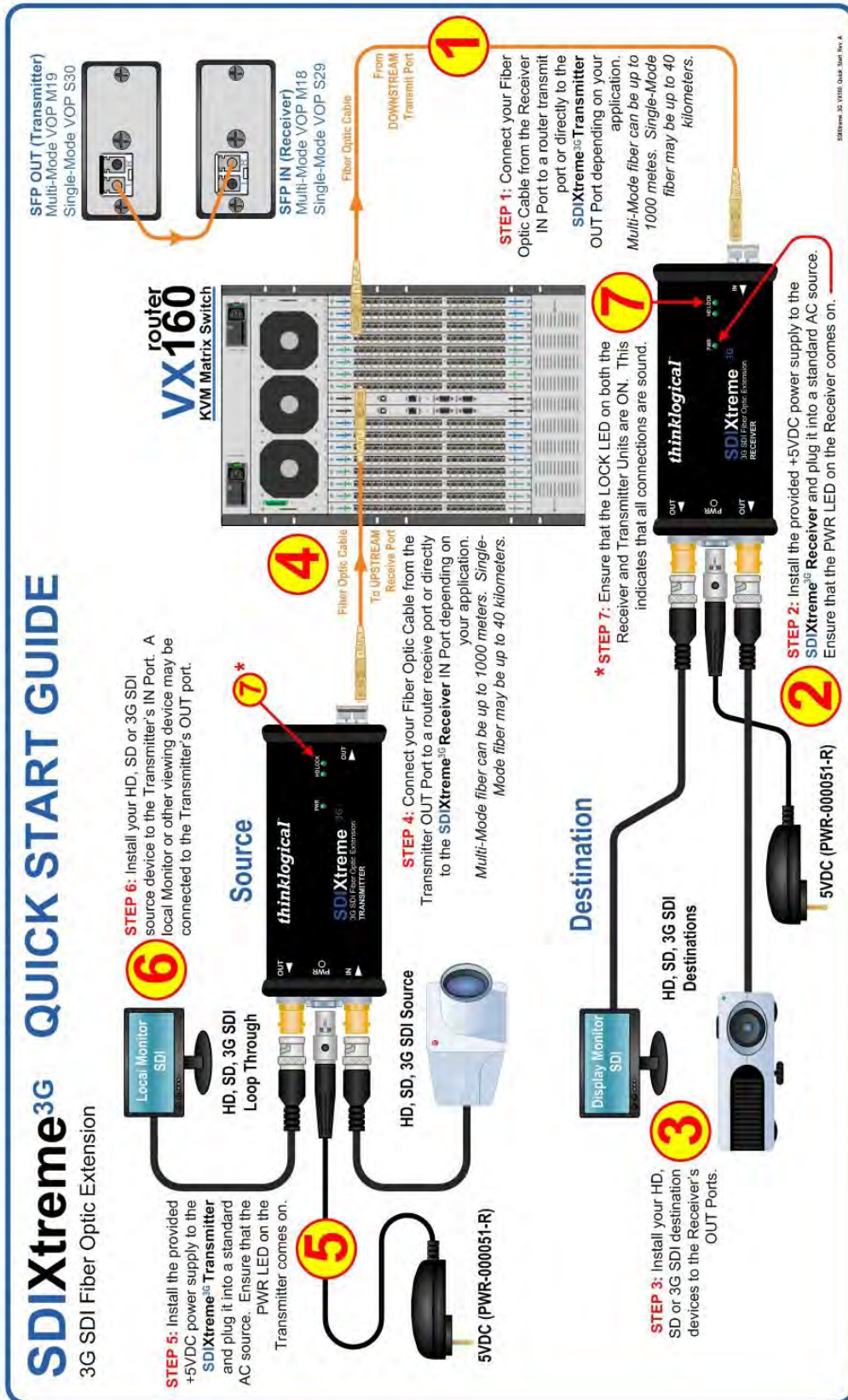
SDIXtreme³ᴳ⁺ QUICK START GUIDE

3G SDI Fiber Optic Extension

Source

STEP 5: Install the provided +5VDC power supply to the **SDIXtreme³ᴳ⁺Transmitter** and plug it into a standard AC source. Ensure that the ACTIVE LED on the Transmitter comes on. The ACTIVE LED will blink if no SDI input is present.

5VDC (PWR-000051-R)

STEP 6: Connect your 3G, SD or HD SDI video source to the **SDIXtreme³ᴳ⁺Transmitter's IN Port.** A local Monitor or other viewing device may be connected to the Transmitter's LOOP OUT port. If required, connect the device's RS422 port to the Transmitter's RS422 Port, located directly below the Power connector.

3G, SD, HD SDI **Loop Out**

3G, SD, HD SDI **Source**

RS422

STEP 4: Connect your Fiber Optic Cable from the **SDIXtreme³ᴳ⁺Transmitter OUT Port** to a Router Receive Port or directly to the **Receiver IN Port**, depending on your application. If using RS422, a second, back-channel fiber, is required.

From UPSTREAM Transmit Port
To UPSTREAM Receive Port

Fiber Optic Cable

VX router 160
KVM Matrix Switch
16 Rack Units, 860 Watts

From DOWNSTREAM Transmit Port
To DOWNSTREAM Receive Port

STEP 1: Connect your Fiber Optic Cable from the **SDIXtreme³ᴳ⁺ Receiver IN Port** to a Router Transmit Port or directly to the **Transmitter OUT Port**, depending on your application. If using RS422, a second, back-channel fiber, is required.

Multi-Mode fiber can be up to 1000 meters in length. Single-Mode fiber can be up to 40 kilometers.

Fiber Optic Cable

SFP OUT (Transmitter)

SFP IN (Receiver)

Fiber Optic Cable

STEP 7: Ensure that the 3G, SD or HD LEDs are illuminated (depending on your signal type). These indicate that the connections are sound.

Destinations

3G, SD, HD SDI Destinations

5VDC (PWR-000051-R)

STEP 2: Install the provided +5VDC power supply to the **SDIXtreme³ᴳ⁺ Receiver** and plug it into a standard AC source. Ensure that the ACTIVE LED on the Receiver comes on.

RS422

STEP 3: Install your HD, SD or 3G SDI destination devices to the **SDIXtreme³ᴳ⁺ Receiver's OUT Ports.** If using RS422, connect your device to the Receiver's RS422 port (located directly below the Power Connector).

3G, SD, HD SDI **Destinations**

SDIXtreme 3G+

Rack-Mount 3G SDI Fiber Optic Extension

QUICK START GUIDE